Spring-Mass System - Pre-Allocation

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Step 2: Array Pre-Allocation

The Need for Array Pre-Allocation

The MATLAB code analyzer produces two warnings about our *x* and *t* arrays changing size on every iteration as demonstrated in the video below. These warnings can be addressed by pre-allocating the memory for these arrays.

The following video briefly explains why array pre-allocation leads to faster code. See this blog-post for more information about pre-allocation.

Pre-Allocation Procedure

We pre-allocate the *x* and *t* arrays using the *zeros* function as shown below.

Change in Run-Time due to Pre-Allocation

We next use the "profiler" in MATLAB to check how much the run-time decreases due to pre-allocation.

Go to Step 3: Plotting

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